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ABSTRACT

The questions of whether undergraduate students use different processes in evaluating their own learning in a course, and whether such differences are related to differences in personality development or cognitive development were studied. It was predicted that students possessing well developed abstract conceptual structures would show a more deliberate use of the evaluation process and a greater degree of differentiation in their self evaluation. Levels of conceptual development of undergraduates in a home economics education curriculum were measured. Results of assessing students' self evaluation, correlated with scores of conceptual level, indicated that most students' judgments were based on personal expressions of goodness or badness rather than on objective references. Little or no differentiation was observed in their judgments, nor were conditional judgments indicated. It was concluded that educators should examine not only the content of students' self evaluations, but also the "contexts" of their judgments and the processes used, and that if students' evaluations are used as a basis for planning learning and instruction, this may undermine the intellectual aims of education. It was suggested that students' self evaluations may be used to aid them in developing higher cognitive and motivational orientations. (MH)

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STUDENTS' CONCEPTUAL SYSTEMS AS A PREDICTOR OF MODES OF SELF-EVALUATION

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THE PRACTICAL EDUCATIONAL CONCERN OF THE STUDY

Differing points of view exist regarding the proper interpretation and use of students' evaluations of their own learning and performance in a course. Among some educators, it is common practice to accept, at face value, students' self-assessments, and to use them as the basis for action taken in instructional and programmatic planning, or even to use them as the basis for determining what and how much has been learned. In such situation attention is paid only to the content of what is reported in students' self-assessments and there is no concern for the process students use in assessing their own performance and learning in a course.

Educators with a cognitive developmental perspective are not so willing to use such indiscriminate interpretations of students' self-assessments as a basis for action taken in education. They point out that a student "evaluation" is a concrete expression by the student, but the bases or the context in which the expression is uttered may differ from student to student. Very different kinds of processes can be used by the students in arriving at evaluative statements. The process can be an emotional or capricious one in which there are not grounds or reasons which serve as the basis of a judgmental expression or it can be deliberate and reflective process guide by reasons or it can be subjected to examination for their intellectual and moral legitimacy (Bebell, 1967; Wilhelms, 1967). Therefore, interpretation of students' self-assessments must go beyond examination of the obvious content of what is reported and include determination of the context of statements making up the self-assessments.

Assuming that all educators are concerned, and have the social responsibility to be concerned (a) that action taken in education as a result of student evaluation is justifiable, and (b) that evaluation be a rational and deliberate process, it seemed reasonable to question whether interpreting or treating all students' self-assessment alike is a sound practice for educators to follow. Since evidence from previous studies suggests that students do use distinctly different modes of evaluation in evaluating instruction (Crittenden & Norr, 1973; Tetenbaum, 1975; Wierschum, 1977) it seems reasonable to question whether students reflect these variations in evaluating their own learning and performance in a course. To put it more specifically, it seems reasonable to ask whether all students are equally as rational and deliberate in evaluating their own performance and learning in a course. It seems appropriate for educators to be interested in determining factors which can predict when students are capable of making rational and deliberate self-evaluations.

These concerns exemplify a concern for "what is wise to do?" or practical knowledge rather than with "what is the case?' or theoretical knowledge (Habermas, 1971). Since education is a practical field, a concern for using theoretical knowledge to guide practice is appropriate in research. Therefore, in this study, theoretical questions were raised in order to gain practical knowledge. Two theoretical questions were raised: (1) whether students' differ in the process used in evaluating their own performance and learning in a course and (2) whether such differences might be related to differences in students' personality structure or level of cognitive development.

THEORETICAL FRAMEWORK

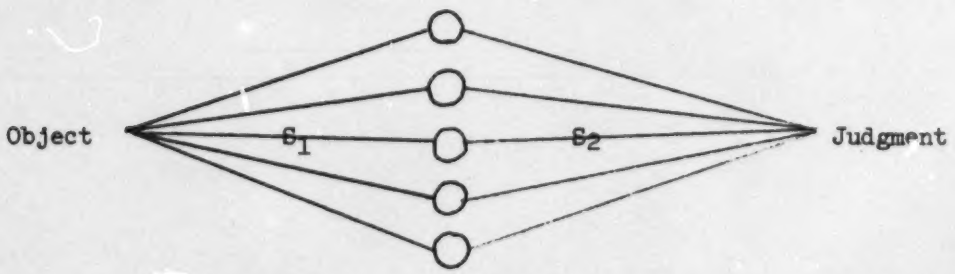
A descriptive theory of evaluation, drawn from philosophic explication

of the concept in education (Scrivin, 1968) and in philosophy (Taylor, 1961; Dewey, 1966) was developed in order to define the nature of the process of evaluation and to identify variations in the process. Two variations of concern in this study were: (a) the degree of deliberateness in self-appraisal and (b) the degree of differentiation in the judgments made. Degree of deliberateness in self-appraisal refers to the extent to which the value claims made are based on objective grounds or references. Variation in degree of deliberateness in self-appraisal was described as ranging from mere judgmental expression without criteria or evidence to a highly deliberate process in which criteria are clearly identified and differentiated, relevant evidence cited, and the judgment is drawn from these criteria and evidences cited. Degree of differentiation in the judgments made refers to the extent to which the value judgments are qualified and multidimensional judgments. Variations in degree of differentiation in the judgments made was described as ranging from judgments which are polarized and absolute in nature, describing the goodness or badness of some one global feature of the value object, to judgments which are qualified, non-categorical and multidimensional in relating and comparing how the details and attributes of each aspect of the value object being judged is considered good or bad according to different value perspectives.

The paradigm used for relating students' personal characteristics to mode of self-evaluation was that proposed by the conceptual model of Lewin (1935) and Brunswik (reported in Rappaport and Summers, 1973), which postulates human action to be a function of the psychological characteristics of the person interacting with qualities of the environment.

More specifically, Brunswik's "lens" model which is concerned with a specific part of action, human judgment, was used to specify a way of

viewing students as evaluators. In the "lens" model, each person is viewed as an active agent approaching judgment using his own lens, which consists of the concepts, values, needs, attitudes and beliefs of the person. The person uses this lens to interpret and integrate the information available in the environment about the object to be judged, in order to make a judgment. Judgments made depend on the way a person's lens allows that person to deal with environmental cues (Figure 1).



S_1 = Environment System

S_2 = Person's Cognitive System

Figure 1: Diagram of Brunswik's lens model showing the relationship among cognitive and environmental systems and the person's judgment. (Adapted from Rappaport and Summers, 1973).

This view of human judgment is related to a particular paradigm for viewing human behavior first identified in psychology. Lewin rejected the two models of human behavior used by psychologists and proposed that human behavior is not determined solely by stimuli in the environment or by innate qualities of the individual. He proposed, rather, that human behavior is the result of an interaction between personal and environmental factors.

Since this paradigm is a conceptual framework and not a predictive theory, Conceptual Systems Theory was used to formulate specific hypotheses. This theory is in the context of the model of Lewin and Brunswik and is

substantively predictive of human action on the basis of a person's known qualities in interaction with the environment's known qualities. (Harvey, Hunt and Schroder, 1961; Schroder, Driver and Streufert, 1967; and Hunt, 1971).

In conceptual systems theory, the conceptual system of a person is considered to be functionally related to how that person uses his lens in perceiving and responding to the environment. Differences in modes of acting (e.g., perceiving, interpreting or integrating information) by different persons, in the same concrete situation, are due to differences in persons' conceptual systems. In the theory, the conceptual system is defined as the self-system and is used as a way to view each person as a total system having a basic or genotypic disposition which can be used in predicting, explaining and giving consistency to a person's mode of acting. The conceptual system is made up of the conceptual linkages or ties, called concepts, which each person establishes with the world. A person's concepts develop an organization or structure as these concepts change from concrete to abstract in nature and from simple and unrelated to complex and integrated. The degree of abstractness and complexity of a person's conceptual system is assumed to be interrelated to the degree of complexity in that person's mode of functioning. Conceptual systems theory defines and establishes developmental levels of the conceptual system, with each level being characterized by differences in a person's cognitive and motivational orientations. More specifically, this system varies in two dimensions: (a) the complexity with which information is cognitively processed and (b) the degree of interpersonal maturity.

Analysis of conceptual systems theory and empirical evidence from research concerned with the effects of a person's level of cognitive and motivational development (or self-development) on that person's mode of acting suggested (a) that students vary in their level of conceptual

development (Hunt, 1977) and (b) that level of conceptual development may affect students' use of the evaluation process. (Berkowitz, 1960; White and Harvey, 1965). This may be so particularly when (a) the object being evaluated is the self, (Mead, 1934; Allport, 1955; Carr, 1965; and Loevinger, 1966) (b) the process is a complex one involving use of reasons and reasoning, (Schroder et al., 1967; and Hunt, 1971) (c) the situation involves disclosing information about oneself to another person (Halverson and Shore, 1969; Jourard, 1971). Students' levels of conceptual development is functionally related to (a) their ability to view self objectively and (b) the intentions, purposes, motivations and sets of meanings students bring to and use in cognitive and interpersonal processes. When evaluation of one's own actions as a student is a rational and deliberate process, a student has the purpose or intention of responding on the basis of a value judgment which concludes a systematic process of evaluation, rather than responding in any other way. In addition, a student intentionally seeks out information which can be used to make an accurate, complete, and objective interpretation of the goodness of several aspects of his/her own learning and performance as a student, on the whole and in the long run, rather than stating here-and-now experiences or over-generalized interpretations of the goodness of his/her own learning and performance in a course.

Persons at immature levels of conceptual development have little sense of self, do not differentiate between self and others, and have a very undifferentiated view of self. Their conceptual systems are made up of concrete and simple concepts and they have difficulty using these undifferentiated concepts in cognitive tasks. They do not seek out information but rather rely on the ideas and directives of authoritative others to guide their thinking and actions. Disclosing information about themselves to others

causes anxiety and they draw quick closure in such situations. On the other hand, persons at mature levels of conceptual development have a highly differentiated view of self and others. They have formulated clearly differentiated and integrated internal standards which they can use in directing their own thinking and acting. Yet, they are open to new and conflicting ideas and they seek out information from others before responding to a cognitive task. They can respond to cognitive tasks and social situations in alternative ways. They are not threatened by having to disclose information about themselves to others. Therefore, in this study, it was hypothesized that a student's level of conceptual development affects that student's ability to respond conceptually, using the intentional and ideational thinking required by the process of evaluation. It was predicted that in evaluation of self-performance and self-learning in a course, those students having developed more abstract conceptual structures, as compared to those students at lower developmental levels:

a. would show a more deliberate and complete use of the process of evaluation and

b. would in the judgment made, show a greater degree of differentiation.

DESIGN AND PROCEDURES USED IN THE STUDY

Since the purpose of this study was to use students' basic mode of interacting with qualities of the environment to explain and predict particular students' action, in this case, mode of self-evaluating, a representative sample of students who were known to vary in level of conceptual development rather than a random sample was used in the study. In this study, the sample consisted of 68 students enrolled in the same undergraduate course in the home economics-education pre-service professional preparation curriculum at the University of Minnesota. Differences in level

of conceptual development were observed by structural analysis of students' responses to Hunt's (1974) paragraph completion test administered to groups of students. Students' responses were assigned a score along the continuous conceptual level dimension. A high score on the dimension was assigned to paragraph completions which showed consideration of two view points, co-ordination of differential responses, clear indication of self-delineation, and use of internal standards. A low CL score was assigned to paragraph completions which were undifferentiated and categorical responses, based on use of an overgeneralized or unqualified acceptance of a single rule and use of only external standards.

Since the goal in observation was to gain knowledge of the process of evaluation used by students, they were provided with the unstructured task of generating their own schema for evaluating their accomplishments in a course, rather than being given a structural instrument to use in evaluating their accomplishments as students. In the course in which the self-evaluations were collected, the instructor simply requested students to write an evaluation of their own learning and performance in the course.

Variations in mode of self-evaluation were observed by conducting a structural analysis of subjects' self-evaluations using two interval scales developed by Brown (1976). A complete description of these scales as used in this study can be found in the original and more extended writing related to this study (Wilsman, 1978). Students' self-evaluations were assigned a score along a continuous dimension. On the degree of deliberateness in self-appraisal, a high score was given to responses in which criteria for all judgments were explicitly identified and differentiated, evidence was cited to support all judgments, and judgments were based on the criteria and evidences cited. Low scores were given to responses in which

no explicit criteria were identified, no evidences were cited, and only a judgmental expression was made. On the degree of differentiation in judgment scale, a high score was given to self-evaluations which expressed consideration of two or more views with respect to aspects of accomplishments in the course and which gave the meaning of each view together with an explanation of how the different interpretations occurred. A low score was assigned to responses in which the judgments made were polarized and alternative interpretations were not considered.

Scores on the measure of conceptual level were correlated with scores on each of the scales to assess mode of self-evaluation by means of the Pearson product moment correlation. The .05 level of confidence was used to determine whether the correlation coefficient obtained in testing each statistical hypothesis had a probability other than zero.

Results of the Study

Two types of inferences were made when interpreting the results of the data analysis: (a) general-type propositions which were made when the statistical data and results were used within the inference model and (b) aggregate-type propositions which were made when the statistical data were used within the decision-theory model (Bakan, 1967). This latter model seemed appropriate to use since the aims of the study were related to the acquisition of practical knowledge to be used in deciding the proper interpretation and use of students' self-evaluation by educators, rather than the creation of theoretical knowledge.

Analysis of the distribution of students' scores according to the scales used to assess mode of self-evaluation indicated that students do vary in the modes or ways of making self-appraisals and that students' judgments

about their own learning and performance in a course do represent very different types of statements. More specifically, there was a moderate distribution of students' scores according to the scale used to assess the degree of deliberateness in self-appraisal. Less than half of the students made value judgments which were supported by objective references (i.e., criteria and evidences). In other words, most of the students in this study made judgments which were little more than personal expressions of goodness (or badness), having only a personal reference, rather than value judgments which were grounded in objective references of experienced goodness. While some students did cite objective references to support their judgments, no students made value judgments supported by criteria which were clearly identified and differentiated so that the evidences cited could be interpreted in terms of the criteria specified.

In regards to the distribution of students' scores according to the scale used to assess the degree of differentiation in judgments made, the majority of students were observed to make judgments which expressed either little differentiation or a complete lack of differentiation. That is, the majority of students made value judgments which were merely categorical and absolute value claims about the goodness (or badness) of global features of their actions as students. No students made conditional judgments which identified the multiple ways of viewing the worth of differentiated aspects of their actions as students.

A test of the relationship between students' scores on the two scales used to measure mode of self-evaluation resulted in a correlation coefficient of 0.45 which is statistically significant at the 0.001 confidence level with 65 degrees of freedom. The two scales measure phenomena which have a positive, linear relationship. Since mode of self-evaluation is expected

to be a general way of responding, this relationship was as theoretically expected.

The results from testing the statistical hypothesis that there is no linear relationship between students' level of conceptual development and degree of deliberateness in self-appraisal were to reject this hypothesis at the 0.01 confidence level with 65 degrees of freedom. The correlation coefficient ($r=0.374$) indicates that there is a positive linear relationship between students' scores on the two variables and, thereby, supports the theoretical expectation that as students develop more complex and abstract modes of functioning, they also use more of the process of evaluation in making self-appraisals. The low correlation was due to two conditions: (a) the low variability and lack of extreme scores in the set of scores and (b) students at more mature levels of conceptual development who made self-appraisals showing little use of the valuation process, rather than students at immature levels of conceptual development making judgments based on use of the process.

The second statistical hypothesis tested was also rejected. With a correlation coefficient of 0.253, a statistically significant relationship was found at the 0.05 confidence level with 65 degrees of freedom between students' level of conceptual development and degree of differentiation in judgments made. This positive linear relationship supported the theoretical expectation that these students having more mature conceptual structures, as compared to those students having more immature ones, in the judgments made, show more than a single, global way of viewing the value or worth of their actions as students. Their judgments show that there are various value perspectives to use in evaluating the worth of each aspect of their actions as students. Again, the low correlation was functionally related to the homogeneity in students' responses on the scale used to measure degree of

differentiation in judgments made and lack of extreme scores in the set of scores. It was also due to the more mature conceptual level of students making undifferentiated judgments. Students at the immature conceptual level did not make differentiated judgments.

IMPLICATIONS FOR EDUCATIONAL DECISIONMAKING REGARDING PROPER USES FOR STUDENTS' SELF-EVALUATIONS

This study has shown that students' evaluations of their own learning and performance in a course reflect more than only the content of what students say in such self-reports. Students' "self-evaluations" also reflect the particular intentions, dispositions and sets of meanings students use to interpret and respond to qualities in the environment. Also, this study has shown that students vary in mode of self-evaluation and that these variations are functionally related to the way students' genotypic, personal characteristics interact with qualities in the environment. These results have practical significance for educators in deciding the proper interpretation of students' evaluations, and they have heuristic value in suggesting a way to view students as evaluators and a way to approach research regarding students' evaluations.

With respect to the proper interpretation of students' "self-evaluation", as when determining their reliability, objectivity, and validity, the results of this study indicate that looking at only the content of what is reported in students' evaluations is not an adequate methodological procedure. Unless educators examine the "contexts" of the students' judgments, there is no way of determining whether students' judgments have grounds or references which are empirical. If a student's judgment is merely a "judgmental expression", it has no reference beyond that student's

saying it. According to the intellectual standards of objectivity and reliability, that judgment cannot be considered trustworthy data. This study has shown that students' self-evaluations have both "person contexts" and "objective contexts" and that without examining the process students used in making their self-evaluation there is no way of determining the "contexts" of the judgments made. As Kaplan (1964) pointed out over a decade ago, without examining the contexts of what is reported, there is no way of determining whether the statement represents a mere value expression or represents a rational and deliberate value judgment. If such procedures are necessary in order to interpret students' self-evaluations, then, for example, the currently popular educational practice of using "quantitative" means to determine reliability (i.e., procedures such as counting the number of times a student, or students, say the same thing) should be considered by educators as an inadequate and incorrect way to measure reliability.

Scriven (1972) has already criticized educators for the confusion which exists in education because of this "quantitative" notion of reliability. The results of this study have also shown that examination of only the content of students' judgments is not sufficient to determine either their reliability or their validity of meaning. The same judgment may represent very different psychological meanings to different students. Unless educators take psychological meanings into account, they are oversimplifying the meaning of students' self-evaluations. Educators will need to use data collection procedures (e.g., procedures which allow for collection of information regarding the process students use in making value judgments) in order to meet the intellectual standards of reliability, validity and objectivity in judging the quality of the data collected in students' evaluations. Determining the quality of the data collected is always

necessary before educators can be justified in using data as the basis for decisions and actions in education. To use extremely poor data to make generalizations is never acceptable professional behavior. Students' judgments which are merely "spur of the moment" reactions cannot be considered trustworthy data to use as a basis for decisionmaking, except to describe the intellectual characteristics of the data.

Furthermore, using students' evaluations as the basis for actions taken in planning learning and instruction may undermine the intellectual aims of education. Some students may be encouraged to use irrational modes of evaluating, if they observe educators using students' judgments which are mere emotive reactions, as the basis for instructional planning. Therefore, educators can have some confidence in rejecting, on intellectual grounds, actions which are taken in education based only on responses to rating scales, since there is no way to properly interpret the intellectual qualities of responses made to rating scales. A proper use of students' self-evaluations would be for purposes of diagnosis and for students' learning of the evaluative process and for students' gaining certain cognitive and motivational orientations needed to be rational and deliberate in evaluating oneself. Helping students develop the dispositions and abilities they need to be rational and deliberate in evaluating should possibly be implemented as an educational objective. For students lower in conceptual level, these objectives should involve development of more abstract concepts and more abstract modes of thinking. Other objectives should be combined with these objectives for students higher in conceptual level, since some of these students were observed to use irrational modes of self-evaluation.

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